

ALOCOSTOMA NEW GENUS (NEMATODA: TRICHONEMATIDAE)

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Summary

MAWSON, P. M. (1979) *Alocostoma* new genus (Nematoda: Trichonematidae). *Trans. R. Soc. S. Aust.* **103**(5), 123-126, 31 August, 1979.

Alocostoma is related to the genera *Macropostrongylus* and *Macropoema*. It is distinguished by the presence of longitudinal striae in the anterior part of the lining of the buccal cavity, and by the very distinctive cylindrical submedian cephalic papillae. A diagnosis is given of the new genus, as well as a partial redescription of the type species, *Cyclostrongylus clelandi*.

Introduction

Cyclostrongylus Johnston & Mawson was revised by Mawson (1977), *C. clelandi* being noted as belonging to an undescribed genus. This species is now redescribed, and proposed as the type of a new genus *Alocostoma*. New material is now available; though not numerous in any one host animal, specimens have been taken over a wide geographical range and from two host species.

Alocostoma gen. nov.

Trichonematidae: Small worms; anterior end with well developed cuticular collar, submedian cephalic papillae cylindrical, truncated; circumoral cuticle and lining of anterior buccal cavity finely striated; buccal capsule lightly chitinated, its shape mobile; oesophagus long and slender, with terminal bulb. Male: bursa not joined ventrally; ventral rays together, ventro-lateral rays divergent from other laterals, externo-dorsal rays arise with laterals, divergent from them; dorsal ray bifurcates, each branch giving off lateral stem; spicules alate, gubernaculum present. Female: tail conical, vulva close to anus, ovijectors opposed, parallel to body length. Parasitic in macropodid marsupials.

Type species: *Cyclostrongylus clelandi* Johnston & Mawson.

Alocostoma most closely resembles *Macropostrongylus* Yorke & Maplestone, 1926 and *Macropoema* Mawson, 1978 which have a long oesophagus with a terminal bulb, the buccal capsule not strongly chitinated, and lips and

leaf crown absent. It differs in the shape of the buccal capsule and of the cephalic papillae.

Alocostoma clelandi (Johnston & Mawson)

FIGS 1-11

Cyclostrongylus clelandi Johnston & Mawson, 1939b, from *Macropus major*, Coonamble, N.S.W.

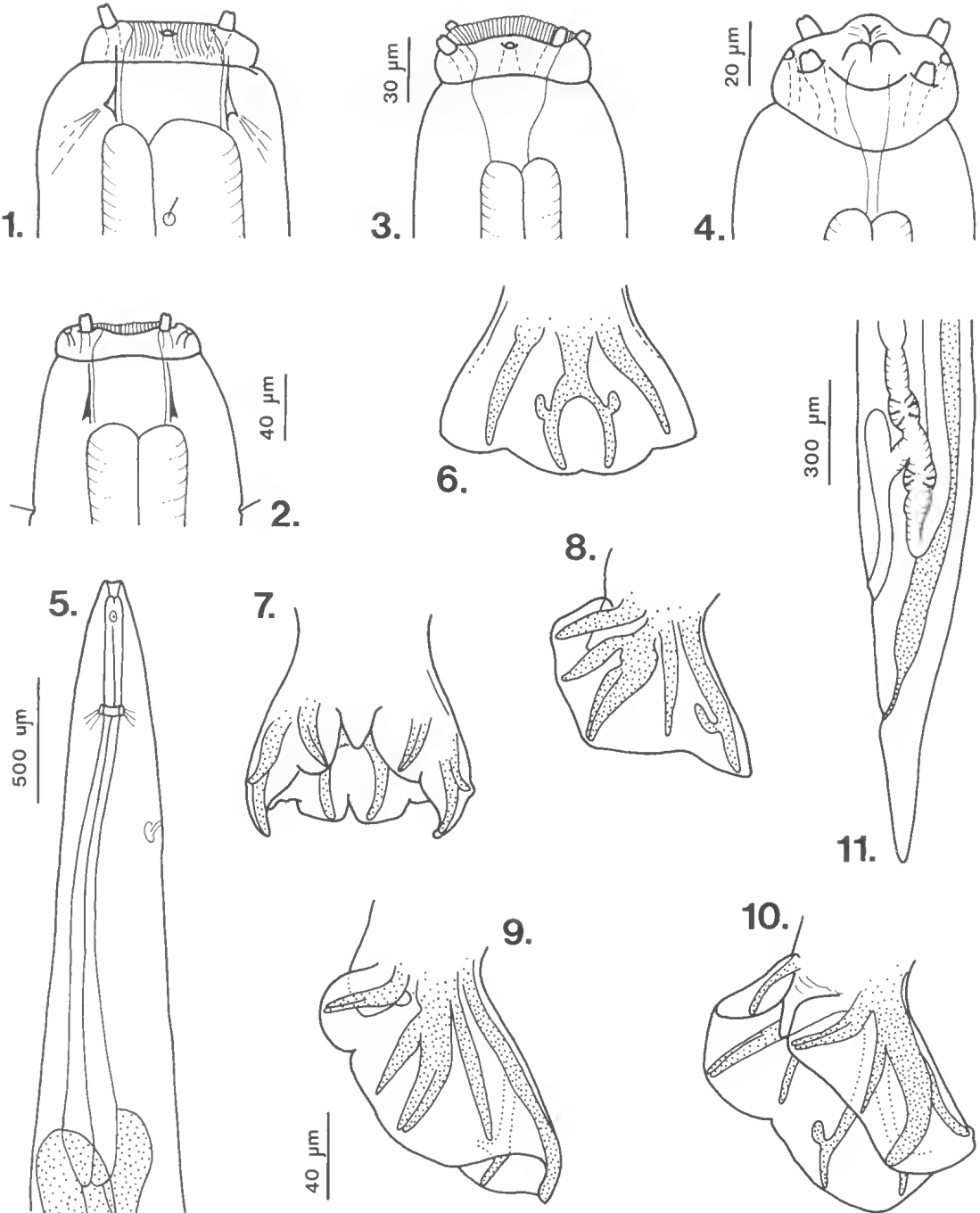
Hosts and localities: *Macropus giganteus* Shaw: Brisbane Ranges (1 ♂), Yan Yean (5 ♀), Fraser Nil Park (2 ♂), Bendigo (1 ♂, 1 ♀), Victoria; St George, Qld 1 ♀; N.S.W. (1 ♂). *Macropus robustus* Gould: Rivertree, N.S.W. (9 ♂, 9 ♀); Kimberley region, W.A. (4 ♂, 12 ♀).

The original description of this species can now be amplified, especially in regard to the anterior end.

Wide, thick cuticular collar around anterior end pierced around its periphery by cephalic papillae and amphids. Cephalic papillae of distinctive shape: cylindrical, abruptly truncated distally, and with small depression in centre of free end. Area around mouth finely striated radially, and striae continue into anterior part of buccal cavity as well marked longitudinal lines. Labial collar can be raised as narrow frill around mouth or depressed below level of outer cephalic collar, not comparable with leaf crown as it appears in *Cloacina* spp. and *Murshida* spp., but similar to labial fringe present in *Papillostrongylus labiatus* Johnston & Mawson (1939a) and labial flange in *Macropoema* spp. (Mawson 1978). Shape of mouth varies—round, elongate, or pursed (Fig. 4).

More or less cylindrical buccal capsule so lightly chitinated as to be almost invisible in

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Figs. 1-11. *Alocostoma clelandi*: 1, head, lateral view. 2, head, ventral view. 3, head with circumoral cuticle raised as a frill. 4, head with mouth closed and lips pursed. 5, anterior end. 6-8, bursa in dorsal, ventral and lateral views. 9-10, lateral and subventral views of bursa of specimens from W.A. 11, posterior end of female.

TABLE 1.

Measurements of *Alocostoma clelandi* from various hosts and localities. Measurements in μm unless otherwise stated.

	<i>Macropus giganteus</i>		<i>Macropus robustus</i>		
	Victoria	N.S.W.	N.S.W.	W.A. host 1	host 2
♂ Length (mm)	14.2-17.11	11.5	11.0-13.5	6.5-10.3	15.0
Oesophagus	1600-2100	1900	1700-1950	1600-2100	1900
Length/oesophagus	7.4-8.8	6.0	6.4-7.4	3.3-4.7	7.0
Anterior end—nerve ring	500-660	580	540-570	410-480	570
—cervical papillae	120-660	—	120-135	130-145	170
—excretory pore	920-1150	700	810-950	580-720	800
Spicules	1700-1900	1780	1700-1800	1700-1800	1900
Length/spicule	8.3-9.4	6.5	6.5-7.5	3.8-5.7	7.8
♀ Length (mm)	17.0-22.2	11.7	11.9-14.3	8.4-10.8	10, 17
Oesophagus	1750-2400	1500	1950-2200	1800-2350	2100, 2400
Length/oesophagus	8.3-9.4	7.8	5.6-6.6	4.6-6.0	5.0, 7.1
Anterior end—nerve ring	450-700	500	510-530	450-500	500, 550
—cervical papillae	130-135	90	105-130	135-140	150, 150
—excretory pore	800-1200	740	830-980	650-700	750, 810
Tail	360-700	420	500-510	350-390	500, 550
Posterior end—vulva	700-1300	780	900-1000	490-650	900, 950

some specimens. When most clearly seen, very thin except for projecting ring near base, apparently for attachment of muscles (Fig. 1).

Oesophagus long, cylindrical with elongate terminal bulb, and surrounded between one quarter and one third of its length by nerve ring. Excretory pore lies at mid oesophageal length, and setiform cervical papillae lie shortly behind buccal capsule. Spicules long, alate. Gubernaculum present. Bursa large, its lobes not clearly demarcated, and short ventral lobes not joined; genital cone small, conical, with lateral swellings and with accessory cone of two short bilobed processes. Figs 6-8 show the shape of the bursa and the arrangement of the bursal rays in specimens from *Macropus giganteus* and in those from *M. robustus* in N.S.W. In males from *M. robustus* from W.A. the dorsal lobe is longer and the dorsal ray correspondingly elongated (Figs 9, 10).

Female body tapers in region of vulva, and again near tip of tail. Length of vagina varies, in specimens from eastern Australia it is shorter than in most of those from W.A. In all specimens there is a distinct anterior caecum from the point of origin of vagina (Fig. 11).

No specimens held eggs in the vagina, though these were present in the uteri. In three specimens eggs had been laid into a brown egg

case, still attached to the worms. These eggs measured $105 \times 50 \mu\text{m}$, were thin shelled, and appeared not to have divided.

Unless otherwise indicated, specimens figured were from *M. robustus*, Rivertree, N.S.W. These were more numerous than those from the type host in Victoria, and were collected much closer to the type locality.

Measurements of the specimens examined are shown in Table 1; those of specimens from different hosts and localities are shown separately; although the dorsal lobe and ray is longer in those from W.A., there does not appear to be grounds for the proposal of a new species. Measurements of specimens from the two hosts in W.A. are given separately, as it seemed that one collection was of younger worms—the body is shorter and no eggs were present in the uteri.

Acknowledgments

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